

JAN 11 2006

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
DALE E. GULICK

Serial No.: 10/084,596

Filed: FEBRUARY 27, 2002

For: EMBEDDED PROCESSOR WITH
DIRECT CONNECTION OF SECURITY
DEVICES FOR ENHANCED SECURITY

Group Art Unit: 2137

Examiner: J. Williams

Atty. Dkt. No.: 2000.051900

DECLARATION UNDER 37 C.F.R. § 1.131 OF DALE E. GULICK

1. My name is Dale E. Gulick. I have personal knowledge of the facts stated herein.
2. I am currently employed with Advanced Micro Devices, Inc. in Austin, Texas. I am a named inventor on application Serial No. 10/084,596 entitled "Embedded Processor with Direct Connection of Security Devices for Enhanced Security."
3. Attached as Exhibit A is a copy of the invention disclosure form I prepared in Austin, Texas for the invention described in the above-referenced patent application. I prepared and signed the invention disclosure form on January 28, 2000, as indicated by the date adjacent my signature.
4. The attached invention disclosure form was provided with internal tracking number TT4033 by AMD's legal department, and it was sent to the law firm of Williams, Morgan & Amerson on or about May 12, 2000, with a request to prepare a United States patent application for the invention disclosed in the invention form.



5. I understand that willful false statements and the like so made are punishable by fine or imprisonment, or both, and may jeopardize the validity of the application or any patent issuing thereon.

6. I declare under penalty of perjury that the foregoing is true and correct.

1/6/06
Date

Dale E. Gulick
Dale E. Gulick



5204 E. Ben White Blvd.
Austin, TX 78741
Tel (512) 385-8542

12MY2000

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J. MIKE AMERSON
WILLIAMS, MORGAN & AMERSON
7676 HILLMONT, SUITE 250
HOUSTON, TX 77040

2000. 051900

RECEIVED

MAY 15 2000

WILLIAMS, MORGAN & AMERSON

RE: Invention Disclosure TT4033

Entitled:

PC SYSTEM WITH AN EMBEDDED PROCESSOR WITH DIRECT CONNECTION OF SECURITY DEVICES
TO THE EMBEDDED PROCESSOR FOR ENHANCED

Dear J. MIKE AMERSON:

Please prepare a US patent application for the subject invention disclosure and file the application in the USPTO within two months of this letter. A copy of the Invention Disclosure is enclosed.

Please follow the instructions set forth in AMD's DIRECTIONS TO OUTSIDE COUNSEL REGARDING PREPARATION AND PROSECUTION OF PATENT APPLICATIONS Version 1.0 dated May 1, 1996.

It is not necessary to prepare a PCT international application at this time. If one is later determined to be needed, AMD will so advise you.

If you have any questions or need additional information, please call me at 512-602-5964, or the responsible AMD Technology Law attorney, LOUIS A. RILEY at 512-602-2788.

Sincerely,

Samantha Cardona
Paralegal
Technology Law Department

Enclosure

cc:

GULICK, DALE E. 61682 (TX)

INVENTION DISCLOSURE AND CONFIDENTIAL

Legal Dept. Use:

ID# IT 1033

Received _____

In Texas:

Return to M/S 562

Call x55964 for assistance

In California:

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Call x26542 for assistance

INVENTION IDENTIFICATION:**BEST AVAILABLE COPY**

WORKING TITLE: PC SYSTEM WITH AN EMBEDDED PROCESSOR WITH DIRECT CONNECTION OF SECURITY DEVICES TO THE EMBEDDED PROCESSOR FOR ENHANCED SECURITY

BRIEF DESCRIPTION AND/OR SKETCH OF INVENTION (you may submit copies of Engineering Notebook pages, reports or drawings as ATTACHMENTS and describe below):

SEE ATTACHED

Engineering Notebook No. _____ Page Numbers: _____ Number of Drawings _____

ADVANTAGES (Check all that apply):

- | | |
|--|---|
| <input type="checkbox"/> Lower Cost | <input type="checkbox"/> Improves Linearity |
| <input type="checkbox"/> Simplifies Manufacturing | <input type="checkbox"/> Improves Accuracy |
| <input type="checkbox"/> Fewer Parts | <input type="checkbox"/> Higher Operating Speeds |
| <input type="checkbox"/> Simpler Construction | <input type="checkbox"/> Improves Signal-to-Noise Ratio |
| <input type="checkbox"/> New Function | <input type="checkbox"/> Improves Efficiency |
| <input type="checkbox"/> Improves Reliability | <input type="checkbox"/> Improves Wear Characteristics |
| <input checked="" type="checkbox"/> New Technology | <input type="checkbox"/> Designs Around Existing Patent |
| <input type="checkbox"/> Solves the following problem(s) _____ | |

Other Advantages _____

GENERAL INFORMATION:

TECHNOLOGY to which the invention relates PC CHIPSETS
 AMD PRODUCT or PROJECT NAME invention would be used in (if any) ZEPH
 Government Dept (Army, Air Force, etc.) and Contract No. _____
PLEASE ESTIMATE:
 Cost per unit \$ 10
 Sales potential \$ 500m per 5 years
 Product life (Number of years) 10 - DEPENDENT
 Product/Process No. _____

AMD CONFIDENTIAL

LIST DATES OF:

First written description of invention	/ /	BEST AVAILABLE COPY
First Drawing	/ /	
First Oral Disclosure	/ / Disclosed to (name) _____	
First Disclosure (i.e. product announcement, external presentation, sampling, offer for sale, etc.)	/ / Specify _____	
Non-Disclosure Agreement:	/ /	
Device First Completed:	/ /	
First Successful Test:	/ / Made by (Name) _____ Tested by (Name) _____	
	Prototype Location: _____	
First Published:	/ / Publication Name: _____	
Introduction of product using invention	/ /	

INVENTOR INFORMATION:

Inventor Signature and Date	<u>DALE GULICH</u>	<u>1/28/06</u>
Inventor's Printed Name	<u>DALE GULICH</u>	
Employee #	<u>61682</u>	Extension <u>55.02</u> Home Telephone <u>263-7693</u> Citizenship <u>USA</u>
Home Address	<u>11715 ASTORIA OR AUSTIN TX 78733</u>	
Mailstop	<u>535</u>	Dept # <u>7953</u> Division Name <u>PPD</u> Supervisor Name <u>HEFE</u> VP Name <u>HEFE</u>
Co-Inventor Signature and Date	_____	
Co-Inventor's Printed Name	_____	
Employee #	_____	Extension _____ Home Telephone _____ Citizenship _____
Home Address	_____	
Mailstop	_____	Dept # _____ Division Name _____ Supervisor Name _____ VP Name _____
Co-Inventor Signature and Date	_____	
Co-Inventor's Printed Name	_____	
Employee #	_____	Extension _____ Home Telephone _____ Citizenship _____
Home Address	_____	
Mailstop	_____	Dept # _____ Division Name _____ Supervisor Name _____ VP Name _____
If there are additional co-inventors, list on separate sheet and check here <input type="checkbox"/>		

WITNESSED BY:

I have read and understood this disclosure and read and signed each page of the attachments:	
Witness 1 Signature	_____ Date _____
Printed Name and Employee #	_____
Witness 2 Signature	_____ Date _____
Printed Name and Employee #	_____

PATENT DEPARTMENT USE ONLY

I have reviewed and understood this Invention Disclosure, and it (is) (is not) recommended to AMD for review for patenting at this time. It should be given (high) (normal) (low) priority.	
BY (Signature)	_____ Date _____
PRINT NAME	_____ Employee Number _____

Autonomous Management Processor (AMP) - IP

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- 1) An IOH with an embedded ASF engine
 - a) Supports both master and slave mode
 - b) 8051-based ASF engine in the IOH (not on the NIC)
- 2) Basic embedded 8051 architecture
 - a) IOH with embedded controller
 - b) Connection to an integrated Ethernet core
 - c) Modifications to the Ethernet core to route ASF messages to the ASF buffers
 - d) x86 -> 8051 communications structure, including interrupts
 - e) 8051 -> x86 communications structure, including interrupts
 - f) P&P configuration space for ASF
 - g) 8051 code stored in on-chip ROM, and shadowed from BIOS ROM into on-chip RAM - also running directly out of BIOS ROM
 - h) 8051/IOH control of system RESET and power supply based on RMCP commands
 - i) Resources in RTC well, 8051 in suspend well
- 3) Use of the AMP for both ASF and ACPI functions
 - a) embedding a controller in the chipset that is ACPI chapter 13 compliant
 - b) Using the AMP for both functions
 - c) System with both general x86 -> 8051 interface and a chapter 13 compliant interface
 - d) 8051 calling SMI-based x86 routines
- 4) Watchdog Timer/ASF system state determination (interpreting WDT timeouts in the context of system status (various BIOS boot states, etc.)
- 5) Hardware interlock that prevents an RMCP Reset or power down or power cycle from happening when the CPU is not hung. Needs to be a write-once initialization option. Tied into the WDT.
- 6) Hanging a smart card reader off of the AMP. Also biometric input devices.
- 7) SMI trap on reset and power down commands. Receipt of the command causes an SMI with a vector in the SEM trap register. The SMI code executes the command if it determines it to be valid. It also sets a timer = 1 second + 1second, -0.001. If the timer expires before being reset by the SMI code - reset can only happen from within SMM - the command is executed by the AMP hardware.
- 8) 8051 code structure
 - a) Master control loop
 - b) Polling task
 - c) SMBus emulation task
 - d) ASF slave mode support
 - e) Incoming Push mode sensor messages on the SMBus
 - f) Address Resolution Protocol
 - g) Packet construction/decomposition
- 9) Embedded controller firmware structure with a hardware errant task termination mechanism
 - a) Hardware timer
 - b) All tasks having a clean-up and exit call
 - c) Makes errant tasks non-fatal
 - d) Task ID and sequence number